



The BexarWire

2008 Fall Issue

October 2008

San Antonio Radio Club "Early Bird" Memberships Available Now

The SARC Board of Directors announces the 2009 Dues schedule which includes the "Early Bird Special" which is effective immediately. All members and new members may join now through Radio Fiesta at the discounted rate of \$12.00 per year. The promotional rate is in conjunction with the "Early Bird" Radio Fiesta advance admission price of \$4.00 per person. By renewing your membership now you ensure that you will be listed in the 2009 membership roster which will be issued during the first quarter of next year. You may renew your membership; reserve your advance admission, or both by mailing the correct amount to:

San Antonio Radio Club
P.O. Box 34263
San Antonio, TX 78265-4263

Or pay your dues at the October meeting which is Thursday, October 9th at 7:00PM at KCOMM.

A copy of the SARC membership form may be found at: <http://w5sc.org/Docs/SARCAApplication.pdf>
Remember to submit the special rate of \$12.00.

Radio Fiesta is a Big Success-To Continue in Schertz in 2009

*Move to Schertz Venue Helps Ensure the Continuing
Success of the Event*



**XE2OZ, N5RXS, N5NAV, XE2MZQ, and KD5DLO at
the 2008 Radio Fiesta**

The San Antonio Radio Club's long running swapfest, newly christened as The San Antonio Radio Fiesta, was held January 12, 2008 at the Schertz Knights of Columbus hall in suburban Schertz, Texas. J.C. Smith, N5RXS, the 2008 Radio Fiesta Chairman, said, "The move to a new facility was just the shot in the arm that the event needed. We found the best of hosts in the Knights of Columbus and their spotless facility was just what area hams told us they wanted for a venue." Bob Williams, AD5TN, is a longtime vendor from Rockport who makes hamfests from Texas to the east coast. "You guys did the right thing", he commented about the move. Bob noted that the SARC winter event is on now par with other regional events he participates in from Florida to Maryland.

But it just wasn't the facility that changed. "We began reaching out to other organizations two years ago when we invited Bexar County ARES to exhibit and to recruit new members at Radio Fiesta". That was expanded this year to include MARS and AMSAT.

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Incidence Skywave Antenna

The K5AXN "LONE STAR" Near Vertical Incidence (NVIS) Skywave Antenna

By David Freiburger, K5OLE

Antennas for high frequency amateur radio use are normally designed for getting the longest communications available at a particular frequency. DX'ers try to lower the take off angle of the antenna in an effort to make the signal refract at the furthest usable point in the ionosphere so that communications may be established towards the far ends of the earth. But during regional emergencies and exercises there has always been a gap between VHF and the often used higher bands of HF, primarily 75 and 40 Meters. So some amateurs have begun using Near Vertical Incidence Skywave Antennas, NVIS, to communicate in that gap from 100 miles (and less) to 500 miles (and often more). The antenna presented here was originally built and demonstrated by Jerry Barry, K5AXN, at a San Antonio Radio Club meeting in 2003 and was based on an article in *CQ Magazine* in the 1970's. With this antenna you can reach virtually every other Texas station from your back yard and with 100 watts on 40 Meters.

The K5AXN NVIS antenna consists of a folded dipole made from common television twinlead and is designed for 40 Meters. The two wires of the twinlead are connected at the ends and one side is cut in exactly the middle for the connection to the transmission cable. It should be mounted exactly 7' above the ground and uses two parallel reflectors on the ground that are out six feet from the antenna. It is fed with 50 Ohm coax cable and should be resonant for much of 40 Meters, when it has been tuned. A matching tuner may be injected into the transmission chain to overcome small mismatches or when deployed over ground with different conductivity qualities.

Dipole antennas lose directivity when mounted below 5/8 wavelength (below 49' on 40 meters) so this NVIS antenna is not directional. Don't worry about the direction of the antenna, place it where it fits. By mounting it at 7' and providing reflectors we are attempting to get as much of the signal as possible to take off at 90 degrees (+/- 35 degrees, in reality). We are creating the dreaded, by most, Cloud Burner. But under 10 MHz, the F layer will return a sufficient

amount of energy to the earth at a reciprocal (very steep) angle so that we can communicate in that 100 to 300+ mile "Skip Zone" where we typically lack consistent, reliable HF communications.

Once you have the piece parts, start the construction:

- Cut the 300 ohm TV antenna wire for the antenna. $468/7.280 = 64$ feet 3 inches. Cut the twinlead at 68 feet so you can tune by trimming after it is up.
- On one side only, cut one of the twinlead wires at exactly the middle of the twinlead. Carefully strip each side of the cut for a connection to your middle support and the coax.
- Strip both wires on both ends of the twinlead leaving enough bare wire to wrap through the egg insulator (or small piece of PVC) and back on the wire. This is a high stress point for the antenna, so make sure you have plenty of bare wire to wrap with. Do not make these connections permanent at this time because we will need to trim the antenna for resonance.
- Attach a length of cord on the free end of each egg insulator with enough to reach, wrap, and tie to your support. Being short here is a mistake.
- Locate and erect your three supports. The center support is located precisely where the coax will connect to the antenna.
- Mount the twinlead between the end supports and at the center support. Flatten the twinlead so it does not twist. The antenna should now be 7 feet off of the ground, +/- 3 inches.
- Check the antenna for SWR with an antenna analyzer (best) or by transmitting at the desired frequency at very low power and observing the SWR reading on your radio. Trim, equally at both ends, to move the desired frequency up and add wire (hopefully you were long to begin and don't have to add wire) to move the frequency down. 7.285 MHz is the daytime Texas ARES Emergency frequency.
- Permanently connect the ends together and seal them. Best soldered, and then taped; then use ScotchKote (or other liquid tape) over the whole connection to keep water out. Do the same if you didn't use a UHF (PL-259 to SO-239) connection at the feed point. If you did use a UHF connection, wrap the connection with electrical tape but do not use the ScotchKote on this connection.

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Build and place the reflectors:

- This design uses two reflectors laid on the ground, parallel to and six feet on either side of the antenna.
- Cut the two reflectors from #14 stranded, insulated wire or any other wire you have available, bare or insulated. The length is not critical but it is best to be long. For the 40 Meter folded dipole cut them at, say, 72 feet.
- Stretch the reflectors on the ground, parallel to the antenna. One goes on one side of the antenna, exactly 6 feet out, away from the antenna. The other reflector goes on the other side.
- Pin the reflectors to the ground with garden cloth pins or pieces of coat hangers.
- DO NOT try to add a director to this antenna, it is counter productive.
- Articles exist that indicate more reflectors might improve efficiency (Cebik, for one, so it has some validity). I'm not sure it is worth the trouble and I have not tested it. If you add reflectors, space them evenly and cut them all to the same length.

Variations of the K5AXN NVIS Antenna

The 40 Meter Folded Dipole described is a folded to increase the bandwidth. You can make this same antenna as a regular dipole by using any reasonably strong single wire, such as the 12 or 14 gauge wire you use for the reflectors.

At night you will need to communicate on 75 Meters and 3.873 MHz is the nighttime Texas ARES Emergency frequency. $468/3.873 = 120$ feet 9 inches. This folded 75 Meter Dipole is a very nice portable/fixed configuration where you have 130 feet or so to mount an antenna and can be used on 40 Meters with a tuner. This is long antenna and may require intermediate supports between each end and the center support. K5AXN recommends that 75 Meter NVIS antennas be mounted at about 15 feet.

NVIS works only below the Maximum Usable Frequency (MUF) and below the Critical Frequency (F₀F₂). It does not work above 10 MHz.

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While the event is organized by the San Antonio Radio Club, its production includes other area organization's participation. "REACT has done our talk in for several years", noted J.C., "We use the San Antonio Repeater Organization's 94 machine for talk in and this year we added a Spanish language repeater." Erik Rabe, KD5YZU, also offered talk in and a special event station on 40 Meters. As a representative of both ROOST and ARES, Erik set up his famous Egg, a mobile radio command trailer with HF, VHF, and NVIS antennas. "I had a lot of attendees stop by and examine my setup", Erik said. "A handful of hams wanted to tell me how I had my antennas setup all wrong, but most were impressed with how quickly and easily I could set up my station. Of course the critics might have been right. All I know is I was talking all over Texas and all over the U.S. with a little bit of wire seven feet off of the ground. Just as I always do with this setup."

The Spanish talk in was not just a casual addition. "We have noted that for several years we were getting some significant of attendance from Mexico", J.C. Smith commented. "When we discussed it with them we learned that our event was one of only a few that we accessible from Northern Mexico where they have no similar gatherings. So we kept that as a consideration as we planned the event and as we advertised it." That consideration paid dividends in the attendance at the Radio Fiesta by Jose Lopez Solis, XE3OZ, President of the Asociacion De Radioaficionados De La Republica Mexicana (ARARM) and ARARM Nuevo Leon Representative Jose Andres, XE2MZQ.

VEC Pat Knight, AD5BR, reports that the SARC VE testing session held at the Radio Fiesta produced four new hams and four others who upgraded.

The 2009 Radio Fiesta will be held again at Schertz Knights of Columbus hall "We'll do the same thing only more of it", J.C. said. Radio Fiesta 2009 is scheduled for January 13, 2009.

SAFETY:

The radiating elements of the K5AXN NVIS antenna are only 7 feet off of the ground at 40 Meters. The antenna carries very high current and voltage and should be marked as dangerous.

The reflectors are a real trip and fall hazard, especially in the dark. Proper warnings are a must.

For basic warning flags I like engineering or "Flagging" tape. It is available at all hardware stores in Safety Orange and other colors. Signage and staking off the area are also recommended.

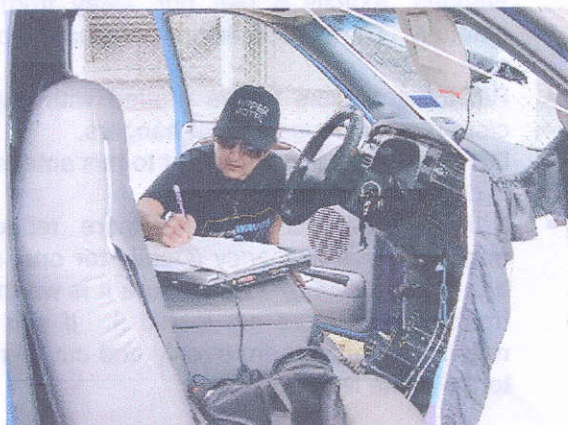
Email : davidfx@swbell.net with questions or comments.

San Antonio Radio Club
P.O. Box 34263
San Antonio, TX 78265-4263

ADDRESS CORRECTION REQUESTED

October Program to Feature Hurricane Ike Experiences

Lothar Harris, K5LEH, will present a program detailing his experiences in Harris County we he and other San Antonio area hams served as communications specialists in the aftermath of Hurricane Ike. Plan to attend at KCOMM on October 9th at 7:00 PM.



Dottie, W7PBR, working out of her truck in Pasadena, TX after Hurricane Ike

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